IN THE CLAIMS

The following listing of claims is provided in accordance with 37 C.F.R. §1.121:

1. (currently amended) A method for reducing artifacts in image data generated by a computed tomography system, the artifacts being due to the presence of a high-density object in a subject of interest, the method comprising:

receiving measured sinogram data from the computed tomography system, the sinogram data representative of a plurality of sinogram elements;

reconstructing the measured sinogram data to generate initial reconstructed image data;

generating corrected sinogram data using the measured sinogram data; and

iteratively reconstructing the corrected sinogram data to generate improved reconstructed image data based on a weight measure associated with each sinogram element, wherein the weight measure ~~is derived from~~ corresponds to a function that is inversely proportional to a variance or to a standard deviation of a signal associated with each sinogram element in the measured sinogram data, throughout the iterative reconstruction.

2. (original) The method of claim 1, wherein generating corrected sinogram data using the measured sinogram data comprises using a projection completion technique.

3. (original) The method of claim 2, wherein generating corrected sinogram data further comprises identifying a trace of the high density object in the measured sinogram data; and correcting the measured sinogram data in the trace of the high density object.

4. (original) The method of claim 3, wherein identifying a trace of the high density object comprises:

segmenting the high density object from the initial reconstructed image data;

reprojecting the segmented high density object from the initial reconstructed image data to generate reprojected sinogram data; and

identifying a trace of the high-density object based on the reprojected sinogram data.

5. (previously presented) The method of claim 3, wherein identifying the trace of the high-density object comprises comparing each sinogram element in the measured sinogram data to a pre-defined threshold value.

6. (currently amended) The method of claim 3, wherein identifying the trace of the high-density object comprises assigning a reliability measure to each sinogram element in the measured sinogram data.

7. (original) The method of claim 3, wherein correcting the measured sinogram data is performed using an interpolation technique.

8. (original) The method of claim 3, wherein correcting the measured sinogram data is performed using techniques selected from the group consisting of consistent completion techniques, spline based completion techniques, iterative correction techniques and non iterative correction techniques.

9. (cancelled).

10. (original) The method of claim 1, wherein the weight measure is derived based on a relative position of each sinogram element with respect to the trace of the high-density object.

11. (original) The method of claim 1, wherein the weight measure is derived based on simulated sinogram data.

12. (original) The method of claim 1, wherein the initial reconstructed image data is generated using a filtered back projection technique.

13. (original) The method of claim 1, wherein iteratively reconstructing the corrected sinogram data to generate improved reconstructed image data is performed using techniques selected from the group consisting of maximum likelihood (ML) techniques and maximum a posteriori (MAP) techniques.

14. (currently amended) A method for reducing artifacts in image data generated by a computed tomography system, the artifacts being due to the presence of a high density object in a subject of interest, the method comprising:

receiving measured sinogram data from the computed tomography system, the sinogram data representative of a plurality of sinogram elements;

reconstructing the measured sinogram data to generate initial reconstructed image data;

generating corrected sinogram data using the measured sinogram data;

assigning a weight measure to each sinogram element in the corrected sinogram data, wherein the weight measure ~~is derived based on~~ corresponds to a function that is inversely proportional to a variance or to a standard deviation of a signal associated with each sinogram element in the measured sinogram data; and

iteratively reconstructing the corrected sinogram data to generate improved reconstructed image data based on the weight measure, throughout the iterative reconstruction.

15. (original) The method of claim 14, wherein generating corrected sinogram data using the measured sinogram data comprises using a projection completion technique.

16. (original) The method of claim 15, wherein generating corrected sinogram data further comprises identifying a trace of the high density object in the measured sinogram data; and correcting the measured sinogram data in the trace of the high density object.

17. (original) The method of claim 16, wherein identifying a trace of the high density object comprises:

segmenting the high density object from the initial reconstructed image data;

reprojecting the segmented high density object from the initial reconstructed image data to generate reprojected sinogram data; and

identifying a trace of the high-density object based on the reprojected sinogram data.

18. (previously presented) The method of claim 16, wherein identifying the trace of the high-density object comprises comparing each sinogram element in the measured sinogram data to a pre-defined threshold value.

19. (previously presented) The method of claim 16, wherein identifying the trace of the high-density object comprises assigning a reliability measure to each sinogram element in the measured sinogram data.

20. (original) The method of claim 16, wherein correcting the measured sinogram data is performed using an interpolation technique.

21. (original) The method of claim 16, wherein correcting the measured sinogram data is performed using techniques selected from the group consisting of consistent completion techniques, spline based completion techniques, iterative correction techniques and non iterative correction techniques.

22. (original) The method of claim 14, wherein the initial reconstructed image data is generated using a filtered back projection technique.

23. (original) The method of claim 14, wherein iteratively reconstructing the corrected sinogram data to generate improved reconstructed image data is performed using techniques selected from the group consisting of maximum likelihood (ML) techniques and maximum a posteriori (MAP) techniques.

24. (previously presented) A computed tomography system for reducing artifacts in image data, the artifacts being due to the presence of a high density object in a subject of interest, the system comprising:

an X-ray source configured to project an X-ray beam from a plurality of positions through the subject of interest;

a detector configured to produce a plurality of electrical signals corresponding to the X-ray beam; and

a processor configured to process the electrical signals to generate measured sinogram data, the sinogram data representative of a plurality of sinogram elements, wherein the processor is further configured to reconstruct the measured sinogram data to generate initial reconstructed image data; generate corrected sinogram data using the measured sinogram data and iteratively reconstruct the corrected sinogram data to generate an improved reconstructed image data based on a weight measure associated with each sinogram element, wherein the weight measure ~~is derived from~~ corresponds to a function that is inversely proportional to a variance or to a standard deviation of a signal associated

with each sinogram element in the measured sinogram data, throughout the iterative reconstruction.

25. (currently amended) At least one computer-readable medium storing computer instructions for instructing a computer system to reduce artifacts in image data generated by a computed tomography system, the artifacts being due to the presence of a high density object in a subject of interest, the computer instructions comprising:

receiving measured sinogram data from the computed tomography system, the sinogram data representative of a plurality of sinogram elements;

reconstructing the measured sinogram data to generate initial reconstructed image data;

generating corrected sinogram data using the measured sinogram data; and

iteratively reconstructing the corrected sinogram data to generate an improved reconstructed image data based on a weight measure associated with each sinogram element, wherein the weight measure ~~is derived based on~~ corresponds to a function that is inversely proportional to a variance or to a standard deviation of a signal associated with each sinogram element in the measured sinogram data, throughout the iterative reconstruction.

26. (currently amended) At least one computer-readable medium storing computer instructions for instructing a computer system to reduce artifacts in image data generated by a computed tomography system, the artifacts being due to the presence of a high density object in a subject of interest, the computer instructions comprising:

receiving measured sinogram data from the computed tomography system, the sinogram data representative of a plurality of sinogram elements;

reconstructing the measured sinogram data to generate initial reconstructed image data;

generating corrected sinogram data using the measured sinogram data;

assigning a weight measure to each sinogram element in the corrected sinogram data, wherein the weight measure ~~is derived based on~~ corresponds to a function that is inversely proportional to a variance or to a standard deviation of a signal associated with each sinogram element in the measured sinogram data; and

iteratively reconstructing the corrected sinogram data to generate improved reconstructed image data based on the weight measure, throughout the iterative reconstruction.

27. (currently amended) A computed tomography system for reducing artifacts in image data, the artifacts being due to the presence of a high density object in a subject of interest, the system comprising:

means for processing a plurality of electrical signals corresponding to an X-ray beam generated by the computed tomography system to generate measured sinogram data, the sinogram data representative of a plurality of sinogram elements, wherein the processing further comprises reconstructing the measured sinogram data to generate initial reconstructed image data; generate corrected sinogram using the measured sinogram data; and iteratively reconstructing the corrected sinogram data to generate an improved reconstructed image data based on a weight measure associated with each sinogram element, wherein the weight measure ~~is derived based on~~ corresponds to a function that is inversely proportional to a variance or to a standard deviation of a signal associated with each sinogram element in the measured sinogram data , throughout the iterative reconstruction.